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**17156015.4 / 3 196 165**  
**14192794.7 / 2 878 579**

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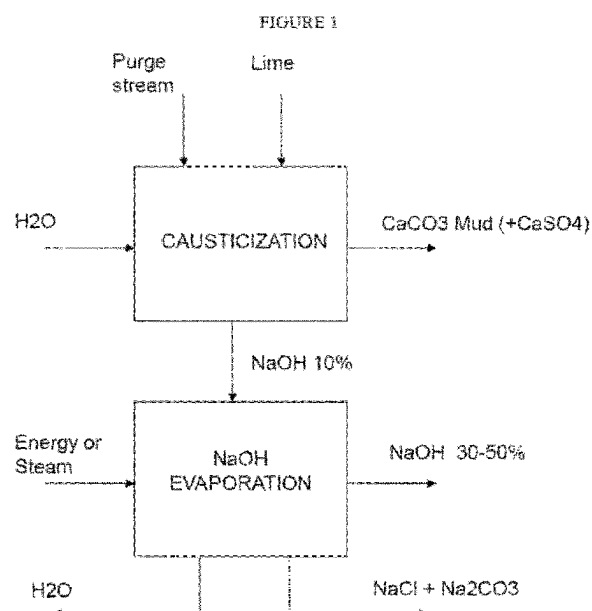
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(54) **PROCESS FOR TREATING A SODIUM CARBONATE PURGE**

(57) A method for treating a purge stream derived from a sodium carbonate, sesquicarbonate, wegsheiderite, or bicarbonate crystallizer, said purge stream comprising sodium carbonate and/or sodium bicarbonate and at least 1 % by weight of sodium chloride and/or sodium sulfate, the method comprising :

- causticizing at least 50 mol. % of the sodium from sodium carbonate and/or sodium bicarbonate into a caustic solution and into a calcium carbonate mud with lime and water,
- separating the calcium carbonate mud from the caustic solution;
- concentrating the caustic solution by removing part of the water to obtain a concentrated caustic solution comprising at least 25 % NaOH, and a crystallized solid comprising sodium carbonate and sodium chloride and/or sulfate,
- separating the crystallized solid from the concentrated caustic solution, said crystallized solid to be disposed of or to be further valorized,
- recycling part of the concentrated caustic solution to the sodium carbonate, sesquicarbonate, wegsheiderite, or bicarbonate crystallizer.





## EUROPEAN SEARCH REPORT

Application Number

EP 24 17 8362

## DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 3 184 287 A (GANCY ALAN B) 18 May 1965 (1965-05-18) * column 4, line 69 - column 6, line 15; figure 3 *	1 - 15	INV. C01D7/24 C01D7/12 C01D1/42 C01D1/22
A	US 5 609 838 A (NEUMAN THOMAS H [US] ET AL) 11 March 1997 (1997-03-11) * column 14, line 63 - column 15, line 34; figure 6 *	1 - 15	
			TECHNICAL FIELDS SEARCHED (IPC)
			C01D
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		12 November 2024	Nobis, Barbara
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3184287	A	18-05-1965	NONE
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US 5609838	A	11-03-1997	NONE
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82